
USGS Hydrologic Instrumentation Facility

A Data Management Plan created using DMPTool

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Template: U.S. Geological Survey (USGS)

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1. Project and Contact Information

Instrument Evaluation: Cabled Ultra-Violet (CUV) produced by AML Oceanographic

U.S. Geological Survey Hydrologic Instrumentation Facility

In this experiment, the U.S. Geological Survey (USGS) Hydrologic Instrumentation Facility (HIF) evaluated the CUV, manufactured by AML Oceanographic, for efficacy in controlling biofouling in an estuarine environment.

2015-11-12

2016-06-27

Question not answered.

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Question not answered.

2. Plan and Acquire

The CUV was deployed twice at the US Geological Survey Pearl River site 02492620 at Stennis Space Center, Mississippi. One six week field deployment was during winter conditions (November 12th 2015 to January 5th 2016) and the other during summer conditions (June 8th to July 25th 2016). During each deployment two EXO multi-parameter sondes with identical sensors were deployed side by side. Sondes deployed were an EXO2 with the CUV attached and an EXO1 control unit without a CUV. A Third EXO sonde that is maintained by the USGS Hydrologic Instrumentation Facility at the Pearl River site was used as the reference.

Provisional data from the Pearl River site 02492620 were downloaded from the National Water Information System (NWIS) web interface and reviewed. Data greater than 3 standard deviations from the mean was considered to be outlying data and removed.

An EXO1 and an EXO2 multiparameter sonde were deployed equipped with pH, dissolved oxygen (DO), conductivity/temperature (C/T) and turbidity sensors identical to those on the Pearl River continuous water quality monitoring site sonde, also an EXO2, hereafter referred to as site sonde.

The EXO1 and EXO2 were programmed to measure on the hour and to log internally. The site sonde was programmed to measure every 15 minutes, log internally and upload real time data through satellite telemetry. All three sondes met the USGS-recommended calibration criteria prior to deployment [6]. The site sonde was monitored by satellite telemetry and maintained weekly according to USGS continuous water quality monitoring protocol [6]. All sondes contained backup batteries in case of site power failure. All sondes were suspended in the same 46 cm diameter stilling well.

The EXO1 was deployed without biofouling preventative or a wiper and was not cleaned during the entire length of each field deployment. The EXO1 acted as the control.

The EXO2 was fitted with a mount to maintain the Cabled UV at a distance of 6.15 cm from top of the sensors. The CUV was centered on the opposite side from the four sensors 2.6 cm from the side of the sensor guard. The location of the CUV ensured that the directness of the angle of the ultraviolet light was as close to 90 degrees as practical and that the sensors were all covered by the beam spread.

The EXO1 and EXO2 were deployed twice at the Pearl River site. The winter deployment was 8 weeks long, from November 12th, 2015 to January 5th, 2016. The summer deployment was six weeks long, from June 8th to July 25th, 2016.

Four CSV files less than 1000 KB

The data will be static.

Instrument reviews are included in the HIF budget.

3. Describe/Metadata and Manage Quality

One new data set will be created.

Data will be maintained as comma separated value text files.

Data were downloaded and converted to csv using proprietary KorEXO software. Data were not filtered and outliers were not removed. The dat is in a raw format.

Metadata will be created using the USGS Core Science Analytics, Synthesis, and Libraries (CSAS&L) - Online Metadata Editor (OME) available at <https://www1.usgs.gov/csas/ome/editor.htm> .

The OME creates metadata that are compliant with the FGDC Content Standard for Digital Geospatial Metadata (CSDGM). Currently the OME can produce records that follow either the original ('core') CSDGM, or the Biological Data Profile of the CSDGM. Data for this project do not include species information, so 'core' CSDGM will be used to produce the metadata.

All sondes met the USGS-recommended calibration criteria prior to deployment following the Guidelines and standard procedures for continuous water-quality monitors; Station operation, record computation, and data reporting. The site sonde was monitored by satellite telemetry and maintained weekly according to USGS continuous water quality monitoring protocol. All sondes contained backup batteries in case of site power failure. All sondes were suspended in the same 46 cm diameter stilling well.

4. Backup/Secure and Preserve

On the government owned computer of the lead scientist, Brandy Armstrong at the Hydrologic Instrumentation facility. A copy is also on the government owned external hard drive of the lead scientist.

Data on Hydrologic Instrumentation Facility computers are backed up routinely. A second copy is maintained on an external hard drive.

There are no access restrictions.

The final data will be in an open data format, comma separated values (CSV) text.

Data will be stored and available to the public through ScienceBase.

The data is being stored in ScienceBase. The cost of storage will be paid by the USGS.

5. Publish and Share

Data will be entered into the USGS Science Data Catalog, which provides seamless public access to USGS research and monitoring data.

There will be no access or use restrictions on the data.

The files will be in comma separated value text format. Anyone will be able to access the data if they have internet access and a text editor.

At least one publication will result from this data.

Brandy NG Armstrong, Teri T Snazelle (2017) Field Testing of AML Oceanographic Cabled UltraViolet Anti-biofouling System in an Estuarine Setting. IEEE OCEANS 17 Aberdeen Conference Proceedings.

Metadata and data will be entered into the USGS Science Data Catalog, which provides seamless public access to USGS research and monitoring data.

A digital Object identifier will be created during the USGS ScienceBase Data Release creation.